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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,169	02/14/2001	Shoji Hara	010164	2107

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EXAMINER

TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,169

Applicant(s)

HARA ET AL.

Examiner

Brian K. Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. The amendment filed 3/2/05 has been considered and entered. Claims 14-16 have been canceled in amendment filed 12/30/02. Claims 1-13,17 and 18 remain in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1-9,13,17 and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 62-60640.

JP 62-60640 teaches sputtering or vapor depositing a metal atop a thermoplastic polyimide sheet and heating to form the laminated film. The metal can be copper. JP 62-60640 teaches bonding a copper foil to a polyimide substrate followed by heat treating to form the laminate.

4. Claims 1-9,13,17 and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chen et al. (5,156,710) or Shiotani et al. (5,741,598).

Chen et al. (5,156,710) or Shiotani et al. (5,741,598) teach applying a metal layer to a polyimide layer and heating to form a conductor layer atop the polyimide layer. The polyimide layer is formed by imidizing a polyamic acid. The metal layer can be applied by a variety of ways but laminating a metal foil is most preferred.

Shiotani et al. (5,741,598) further teaches that it is conventional in the art to form the metal layer atop the polyimide film by plating (col. 1, lines 27-30) The laminate is formed by applying the metal layer to the imide layer and heating by pressure.

Claim Rejections - 35 USC § 103

5. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (5,156,710) or Shiotani et al. (5,741,598) in combination with JP 62-60640.

Chen et al. (5,156,710) or Shiotani et al. (5,741,598) fail to teach a dry plating method for coating the metal layer on the polyimide layer.

JP 62-60640 teaches sputtering or vapor depositing a metal atop a thermoplastic polyimide sheet and heating to form the laminated film. JP 62-60640 forms the laminates in a continuously mode of extrusion forming. Not laminated with metal, the resin may be plated with metal through chemical plating, electroplating, sputtering or vapor deposition to produce the laminates of the invention (pg. 7 of translation filed 1/09/04)

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Chen et al. (5,156,710) or Shiotani et al. (5,741,598) process by forming the conductor layer as evidenced by JP 62-60640 with the expectation of achieving similar results.

Claim Rejections - 35 USC § 103

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62-60640 or Chen et al. (5,156,710) or Shiotani et al. (5,741,598) in combination with JP 62-60640 further in combination Ameen et al. (5,681,443).

JP 62-60640 or Chen et al. (5,156,710) or Shiotani et al. (5,741,598) in combination with JP 62-60640 fail to teach wet coating a metal atop the dry coated metal.

Ameen et al. (5,681,443) teaches forming printed circuits whereby a metal flash layer is applied to a polymer substrate by vapor deposition or sputtering and subsequently a metal layer is applied to the flash metal by electrodeposition.

Therefore it would have been within the skill of one practicing in the art to have modified JP 62-60640 by forming a second metal coating by wet plating as evidenced by Ameen et al. (5,681,443) with the expectation of achieving success, i.e. a thicker coating.

Response to Arguments

6. Applicant's arguments filed 3/2/05 have been fully considered but they are not persuasive.

Applicant argued that the prior art teaches applying heat to form the conductor layer along with the pressing step and not as a post heat treating step.

Applicant arguments are not commensurate in scope with the claims. The claims are not limited to excluding the steps to be performed simultaneously. The claims can be broadly read

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as being performed simultaneously and would be met by the references "heated pressing".

Furthermore, the reference teaches applying a metal foil/layer to the polyimide substrate (which meets the claim forming step) and then applied pressure and heat to form the laminate (which meets the claimed heating step) (see examples in 5,741,598).

Applicant's amendment with regards to claim 1 does not limit the claims as argued. The claims still read upon the art of record as detailed above.

With regards to JP 62-60640 teaches heat pressing metal foil as well as applying to metal layer by plating (example 9) and heating as shown in the table. JP 62-60640 teaches the metal layer can be applied to the polyimide substrate by a variety of coating methods including sputtering and vapor deposition (pg. 7 of translation). Hence, a subsequent heating step would be suggestive after the coating of the metal by any of the methods described.

7. Citations of noted of record:

JP 11-240106 (teaches metal laminate by sputtering metal on a polyimide substrate and heat treating).

Takagi (4,091,138) (teaches ion plating, sputtering and vapor deposition of metal layer on a polyimide substrate – no post heat treatment step).

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 5/17/05

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT